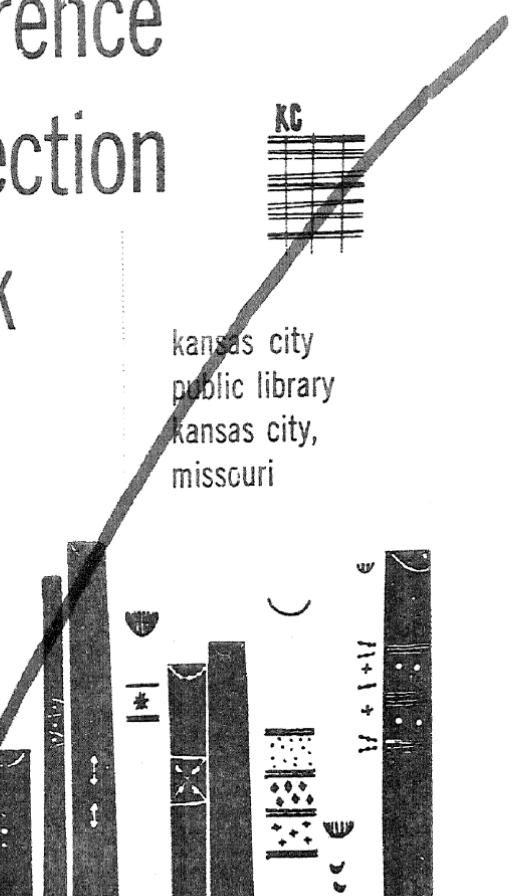


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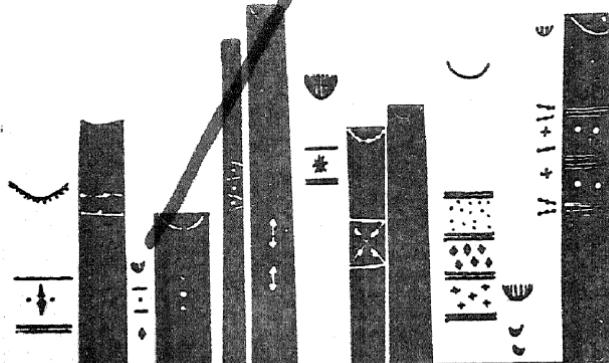
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THE METROPOLITAN MUSEUM OF ART

CARE
AND HANDLING
of
ART OBJECTS

By ROBERT P. SUGDEN
REGISTRAR

NEW YORK • 1946

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FOREWORD

This summary of instructions for the care and handling of museum-owned art objects is the equivalent of a primer on the subject.¹ It is intended to establish certain fundamental rules for the protection of objects in movement on museum premises. The elements of the practice of good handling presented in the outlines may be of help in formulating training programs for new and inexperienced assistants. Designed primarily as a guide for beginners, it may serve also as a refresher course for those of long service in the field whose good habits, acquired in early training, have suffered as a result of compromise with convenience. To those experienced in museum work the rules are, perhaps, too elementary; yet administrative and curatorial officials might well feel reassured if the materials in their custody were always accorded such simple consideration.

At the end of each section, the rules discussed therein are summarized in instruction-sheet form for use by those who actually handle works of art. (These summaries have been separately printed to facilitate distribution and are available on request.) The repetition of what may seem to be obvious rules was unavoidable since many of the same rules apply to various classes of material.

I am indebted to the curators and other members of this museum's staff for their suggestions. The methods used in administering the respective departments have provided much of the data from which the following outlines were evolved. Furthermore, each of the ten curatorial departments has approved the rules applicable to objects in its own field. Special thanks are due to Murray Pease, Associate Curator in Conservation and Technical Research, who has reviewed all the sections from the technical standpoint. John J. Wallace, Superintendent of the Buildings, has read the instructions with par-

ticular attention to the mechanics of protection. The illustrations of basic on-the-premises transportation equipment and frame-stretcher fixtures are reproduced from drawings by Eva E. Moss.

The present compilation, in substantially the same form, will be used again in a handbook now in preparation on the control and care of art assets. Among other subjects to be discussed in it are storage, transportation, packing, and insurance.

R. P. S.

¹*To simplify the presentation, the various types of art objects have been classified in five main groups. This classification was established by Robert G. Rosegrant in an article, "Packing Problems and Procedure," which appeared in Technical Studies in the Field of the Fine Arts, vol. X, (1942), p. 138-156.*

CARE AND HANDLING of PAINTINGS

Hazards of mechanical violence to be guarded against: abrasion, puncture, fracture, disintegration. Other hazards include: extreme heat, water and dampness, sudden changes of temperature and humidity, dirt.

In the handling of paintings, as of all other works of art, the experienced handler provides the real insurance. Accordingly, when an assignment is given to a single worker, he must be an experienced man. When two men are working together, at least one of them must be experienced, and he should be in charge of the operation. When installation or dismantling of exhibitions is in progress, all operations must be under the personal supervision of a responsible member of the staff.

It is possible, of course, for one man to move more than one painting at a time without serious consequences. However, since the probability of damage increases greatly in proportion to the number of paintings carried, it would be wise to impose and enforce a rule that no one shall move, handle, or carry more than one painting at a time.

The movement of large paintings requires the use of more than one man. Large canvases in heavy frames are usually moved by two or more men as a matter of course. Those on the borderline between medium and large, however, are often carried by one man simply because he is strong enough to do the job alone. This practice is inadvisable. Whenever a painting is big enough to be awkward, at least two men should be assigned to the task, regardless of the weight.

The normal slow deterioration of painted surfaces can easily be accelerated by well-intentioned exploration. There is a tendency on the part of the inexperienced to determine the extent of the weak-

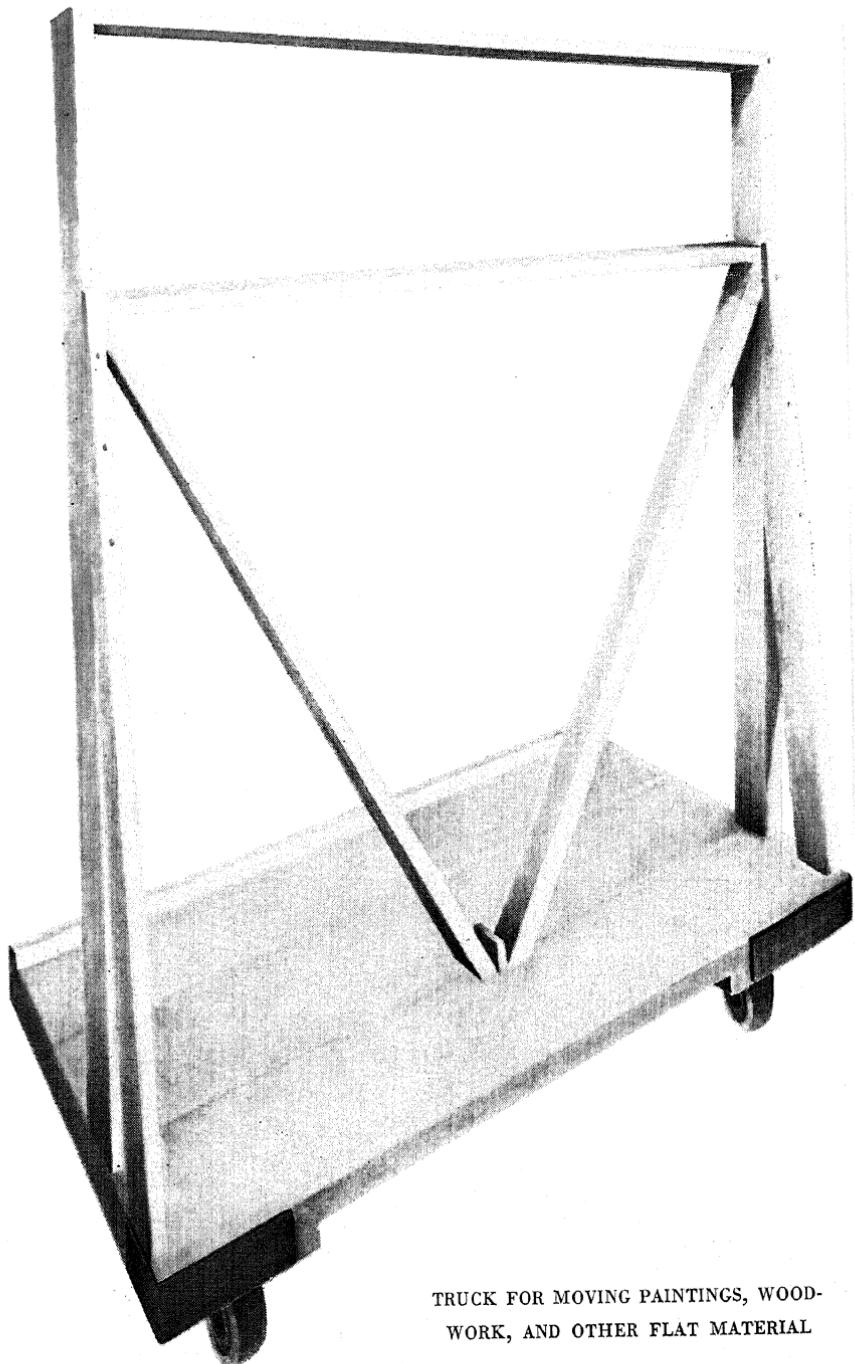
A METHOD OF ATTACHMENT WHICH
ELIMINATES CONTACT BETWEEN PAINT-
INGS AND FRAMES

ness by touch. Thus, time and again, people test blistered and flaking canvases or attempt to remove scratches, rubbed spots, or dirt marks by hand. It is obvious that no such activity should be undertaken by anyone other than those qualified and authorized to do it. Accordingly, warn all who handle paintings to avoid any direct contact whatever with painted surfaces. This means that even the removal of surface dust must not be attempted by untrained men.

A standard procedure in dealing with the ever present lack of storage space is the "stacking" of paintings and other framed material. However, responsibility for the collections requires a warning against indiscriminate pursuance of that policy. Frames suffer the most mechanical violence when pictures are stacked, but unless separators are used between them, canvases are seriously endangered as well. Assuming that occasional stacking is unavoidable, responsibility for it must be accepted by the curator or staff member in charge. From that point on, every precaution must be taken to reduce the inherent risks. A strict rule should be enforced: Never stack paintings unless a separating board is used between each of the pictures in the stack. These separators may be any sort of composition or fibreboard; corrugated cardboard is one of the best substances for the purpose. It is not long-lived, as such material goes, but its advantage lies in the fact that it is resilient. Under pressure, it gives just enough to protect the average unornamented frame.

When storing paintings with ornate frames—gilt over gesso, for example—padding of some kind is needed in addition to the separators. Wadded cotton serves the purpose fairly well, but it does not stay in place. Some museums use specially constructed quilted pads of ticking filled with cotton, several feet long and six or eight inches wide, which are hung over the upper frame corners. In an emergency, crumpled newspaper will prove an adequate padding.

In the stacking process, the largest painting should be placed first (face out), followed by the smaller ones in order (also face out). No more than five medium-sized paintings should be put in any one stack. Moreover, each composition sheet must cover the larger of the two paintings it separates. Further to protect the framed picture, direct contact with gallery and storeroom floors should be avoided.



TRUCK FOR MOVING PAINTINGS, WOOD-
WORK, AND OTHER FLAT MATERIAL

The frame should rest on heavy pads or on padded wooden strips, which may be made of two-by-fours of varying lengths. Aside from their value in guarding against abrasion and fracture, the padded strips protect the frames from water damage in case of leakage in basement storerooms.

The loading of paintings on so-called side trucks (illustrated on page 6) requires that the floor of the truck be padded and that separation sheets be used between the pictures as in stacking. Trucks should not be overloaded, nor should frames extend beyond the edge of the truck. Large, heavy paintings should not be placed on side trucks on which the upright support is not high enough to reach two thirds the height of the frame and so bear the main weight of the picture. Never allow the weight of a picture to be borne by the stretcher alone. Paintings must be securely lashed in place before the truck is moved. This rule applies to single pictures as well as to fully loaded trucks. Each fully loaded truck, when in motion, should be accompanied by two men, one of whom must be experienced.

The protection of frames is subsidiary to that of the paintings themselves, of course, yet many museums have found that damage to frames through carelessness alone accounts for a sizable outlay for repairs in the course of a year. The inexperienced helper does not realize that a fairly good frame costs several hundred dollars, and this fact should be brought to his attention. While it is true that mechanical violence is the main cause of damage to frames, considerable harm can be done to light-colored, mat finish, or gilded frames by seemingly unimportant finger marks. Most frames cannot be washed, and, as a consequence, refinishing is necessary—and at no small expense. Cheap white cotton gloves are recommended for handling easily marred frames. White ones are recommended advisedly, for there will be no doubt when they begin to soil. Dirty gloves cause almost as much trouble as dirty hands.

Care of the ornate frame means care in lifting as well as in stacking. Such frames should be examined for old breaks, repairs, and points of weakness before they are moved; the drying out of adhesives leaves damaged parts brittle and highly susceptible to separation at points of earlier breaks. Paintings should be carried with

both hands, one beneath and one at the side of the frame, in each case at a point where the frame is solid, not where the entire weight must be borne by the ornamentation alone. Never move or carry a painting by the top of the frame.

The foregoing points relate particularly to movement of paintings on the premises. Their preparation for movement is another important part of the over-all protection program. As previously recommended, installation and dismantling of exhibitions should be under the personal supervision of a staff member, and it should be his duty to see that supporting wires and fixtures are strong enough to bear the weight to which they will be subjected. After the exhibition is over, screw eyes and dangling wires should be removed from the frames as soon as they come from the walls. Both are dangerous—screw eyes particularly to the frames of other pictures with which they come in contact, while wires can seriously damage any painted surface.

The manner in which many museum-owned paintings are held in their frames could be improved. It is true that out-of-the-building transit is more likely to result in harm to the loosely framed canvas than movement on the premises, but any sort of movement can result in chipped edges on the painted surface of a picture which slips in its frame. Security of the canvas should never depend on nails; they work loose too easily and fall out. Recommended instead are metal strips (or plates) attached in pairs, one to the frame and one to the stretcher, so that the painted surface is not pressed against the frame rabbet. Since by this method the painting is “suspended” rather than fixed in place, movement within the frame is controlled by cork plugs affixed under each set of paired plates. The drawing on page 4 shows the method developed at the Fogg Art Museum.

CARE AND HANDLING OF PAINTINGS

GENERAL HANDLING RULES

1. No one shall handle, move, or carry more than one painting at a time. Carry it with one hand beneath and the other at the side of the picture, both at points where the frame is solid. Never carry a painting by the top of the frame or by the stretcher.
2. Large paintings must be moved by no fewer than two men, one of whom is experienced in correct handling of paintings. (By "large" is meant large enough to be awkward for one man. It does not mean that it is all right for one man to move anything he happens to be strong enough to lift.)
3. Do not stack paintings—one leaning against another—unless it is absolutely unavoidable, and then only with permission of the curator or other responsible person in charge.
4. Separate paintings with composition sheets (corrugated cardboard, compo board, etc.), if stacking is absolutely necessary. Stack the largest painting first, followed by smaller ones in order, with no more than five paintings in any one stack. Each composition sheet must completely cover the larger of the two paintings it separates.
5. Paintings standing on the floor must rest on pads or padded wooden strips.
6. Separate paintings on side trucks with composition sheets. There must never be so many paintings on a truck that the outside painting, or its frame, extends beyond the edge of the truck. Pad the floor of the truck to prevent damage to frames.
7. Do not move large, heavy paintings on side trucks unless the truck's supporting framework is high enough, that is, at least two thirds the height of the picture. The weight must be borne

by the frame resting against the truck support; it should never be borne by the stretcher alone.

8. Lash the paintings in place before the truck is moved. Two men must accompany each loaded, moving truck. At least one of them must be an experienced man.

ADDED PROTECTION FOR CANVASES AND FRAMES

9. When dismantling an exhibition, remove screw eyes, wires, hooks, etc., from the frames as soon as they come from the walls so that neither pictures nor frames will be harmed in transit or in storage.
10. Avoid direct contact with painted surfaces at all times. Do not attempt to remove slight scratches, rubbed spots, or dirt marks with your hand, a cloth, or by any other means. Where varnish is in poor condition, even gentle pressure will leave a mark which may call for treatment of the entire surface.
11. Wear white cotton gloves to avoid damaging finger marks when working with light-colored, mat finish, or gilded frames. Clean hands are not enough in this case, as perspiration spots so easily spoil the frames' appearance.

REPORT ALL DAMAGES

12. Report any damage which appears to be of recent origin, no matter how slight it seems to be. Get in the habit of examining paintings to determine condition.
13. If paint flakes or frame parts become detached, save all the pieces. Repairs are much easier if all the parts are available.

CARE AND HANDLING of LARGE OBJECTS

Hazards of mechanical violence to be guarded against: abrasion, fracture, disintegration.

Other hazards include: extreme heat, water and dampness, sudden changes of temperature and humidity, dirt.

While planning operations in advance is advisable in every phase of handling objects of art, the need for it is greatest in working with such large, heavy, or clumsy objects as sculpture and room paneling. For the safety of the handlers as well as that of the material, it is necessary for all the men on the job to know exactly what they are to do before they start to do it. It is desirable to use only experienced men on such work, but when this is not possible control of the crew should be entrusted to a foreman or leader who is technically proficient. Most heavy operations of this type require special equipment—hoists, tiering boxes, block and tackle—and its proper use should be part of a training program; such experience should not be acquired through practice on valuable works of art. Haste is dangerous when working with objects in this category.

Sculpture. When sculpture is being transferred on trucks or trolleys (see drawings on pages 13 and 26), the piece must rest on heavy pads, with weight evenly distributed, to protect it from abrasion. Furthermore, it must be kept in place with pads, padded blocks, or wedges to prevent harmful movement in transit and, if necessary, covered with blanket-type pads and lashed to the truck. If the pads are old and dirty, the sculpture must be covered with paper or fresh muslin to keep it clean. Since marble or stone figures are in nearly every case transported in a horizontal position, correct blocking and “shoring up” with pads are necessary to relieve abnormal strain on parts designed for positions other than those in

which they are moved. One of the most common points of danger in large sculptured figures is in the neck region, as it is there that evidence of earlier breaks is frequently found. Since the weight of the head unsupported is in itself sufficient to cause some separation at restoration seams, great care must be exercised in placing the support. Other parts which may need support are arms and hands; in fact, any projecting area needs it. Over-padding is, of course, almost as hazardous as none at all.

Installation of sculpture should always be done under staff supervision, and the supervisor should be responsible for the safety factors involved in placement of the material to be exhibited. Secure fastenings should be provided for top-heavy pieces, so that they cannot readily be displaced. Small sculpture is usually strapped in position unless the piece itself or its pedestal is specially constructed with dowels. For exhibition purposes, sculpture in the round must have pedestals sufficiently weighted to keep it steady when exposed to casual contact.

Woodwork and Furniture. There is a generally accepted rule against pushing furniture and woodwork along the floor. As a result of just such treatment, the legs of old tables and chairs and the feet or bases of cabinets are generally unable to stand much strain. Careful examination should be made, before moving things of this type, to determine to what extent repairs and earlier breaks have weakened the structure. Such conditions having been noted, structural weaknesses can be compensated for by added care.

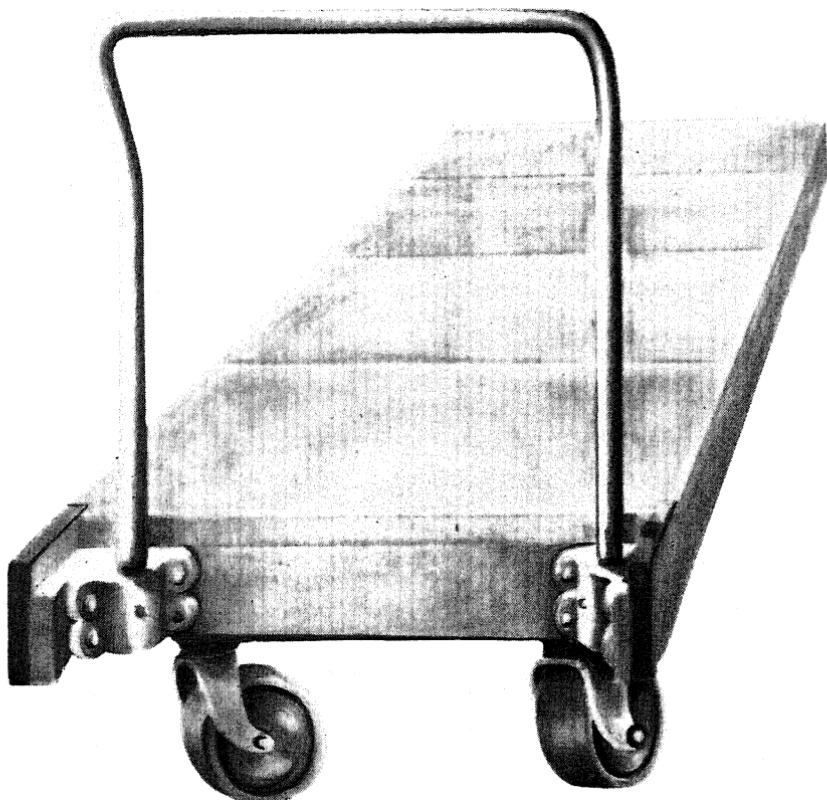
Flat trucks or trolleys are the most practical equipment for moving woodwork and furniture. If they are in sufficient supply and really suitable for the work expected of them, it will be found that they are used as a matter of course. The objects for which they should be employed will suffer if equipment is poorly designed, scarce, or inaccessible.

In moving wood paneling and large furniture, care should be taken to avoid grasping or lifting it by projecting parts. In most cases the trim, molding, and decorative elements were lightly attached to begin with and were not meant to bear the dead weight of

the entire piece. The original attachment having been indifferent from the standpoint of durability, very often the ornament has suffered damage and has been repaired; in consequence it is particularly vulnerable to sudden shock or applied pressure. Projections and base areas of old furniture and woodwork are usually worm-eaten; extra care in handling is therefore required.

Intra-plant transportation of furniture is most frequently accomplished on large, flat-bed trucks. When such trucks are used, padding is necessary if the pieces are moved with polished surface down. Overloading of trucks and loading so that furniture extends beyond the truck platform are common dangerous practices.

Upholstered furniture readily absorbs dirt and dust and is very



FLAT-BED TRUCK FOR FURNITURE, SCULPTURES, AND HEAVY OBJECTS

difficult to clean; therefore it is best to cover upholstered portions of chairs and sofas with paper or muslin before moving them. This need is underlined by the fact that the parts most convenient for lifting are the ones normally covered with fabric. Chairs should always be lifted under the seat rail, never by backs or arms. In transferring furniture from one part of the building to another, table tops of marble (or of protective plate glass) should be removed and handled separately. These are best transported in a vertical rather than a horizontal position.



TRUCK FOR TRANSPORTING TRAYS OF SMALL OBJECTS

CARE AND HANDLING OF LARGE OBJECTS

GENERAL HANDLING RULES

Sculpture

1. Moving large sculpture is a technical problem. Do not attempt it with too little help or without competent direction. Haste in handling may result in injury to the handlers or damage to the objects.
2. Do not carry heavy sculpture by hand, even if you are able to lift it. It should always be moved on padded trucks, supported and, if necessary, tied to prevent harmful movement while the truck is in motion.
3. Examination of the object before handling is particularly recommended for sculptural material. Knowing the points of weakness in advance is important to the safe movement of the piece. When there is any doubt about whether or not it is strong enough to withstand the strain of transit, get the advice of the person in charge.

Woodwork and Furniture

4. Always move woodwork or furniture on trucks or trolleys (dollies). Never slide or push such objects along the floor, for legs and bases are usually in a weakened condition owing to age or previous damage.
5. Always lift chairs under the seat rail, never by the backs or arms. Carry tables and other furniture by the solid parts of their framework, not the ornamentation.
6. Cover upholstered furniture in transit, as delicate fabrics are difficult to clean. Do not touch the upholstery on the arms, seats, or backs of chairs or sofas.

7. Do not overload flat-bed trucks. Placing chairs, etc., on top of tables or other objects is a dangerous practice. Separate pieces of furniture with pads to prevent contact if more than one is placed on the truck at the same time. Do not allow objects to extend beyond the edge of the truck. Unlocked drawers and cabinet doors as well as folding table tops, movable parts, etc., must be held in place (tied if necessary) to prevent damage in transit.
8. Remove marble tops for transit and transport them in a vertical position on side trucks. Do not carry them horizontally as they may break of their own weight.
9. Wood paneling is seldom as strong as it looks. Movement of it should never be undertaken without sufficient help and proper supervision. As moldings and trim are lightly attached, do not try to lift or move woodwork by projecting parts.

REPORT EVERY DAMAGE WHICH APPEARS TO BE NEW.

PRESERVE ALL FRAGMENTS
WHICH MAY BECOME DETACHED.

CARE AND HANDLING of SMALL OBJECTS

Hazards of mechanical violence to be guarded against: abrasion, puncture, fracture, disintegration. Other hazards include: extreme heat, water and dampness, sudden changes of temperature and humidity, dirt.

Ceramics, Enamels, Glass, Etc. The handling of objects of general interest is frequently motivated by curiosity alone; offenders are usually those whose official duties do not include examination of material outside the scope of their own departments. Unfortunately, small, fragile objects which can ill afford unnecessary handling seem particularly to invite it. Museum assistants on all levels should be warned on this point at the time of their employment and throughout the training period. Installation and dismantling of exhibitions composed of small objects should always be done under the supervision of a responsible member of the staff.

Small fragile objects should not be lifted or carried by handles, rims, or any other projecting part. These projections, since they are most susceptible to damage, are the points at which repairs of earlier breaks may exist. Drying and decomposition of the repairing adhesive are common, with the result that unprotected areas of stress are further weakened. It is well, therefore, to enforce the rule: Carry only one object at a time, with one hand beneath the object, the other hand at the side or top for extra safety.

Gloves or tissue paper should be used when handling objects with glazed, polished metal, or other highly finished surfaces. It is often difficult to remove finger marks. Tempéra, mat finishes, etc., are so adversely affected by dirt or perspiration marks that they often require refinishing or restoration. A sound principle for the proper care of such delicately surfaced material in movement is: When in

doubt as to the method of handling, ask for guidance from the curator or staff member in charge of the operation.

Small, light pieces such as glass, ceramics, ivories, and enamels should always be moved in padded trays. Moving by hand is permissible only from exhibition case to transit tray or from tray to storage space (or the reverse). Each fragile object must be separated from others within a tray by cotton or other soft packing material to prevent chipping. While many enamels, ivories, etc., retain their original smooth finish for years, others, through exposure to unfavorable conditions, become so dry that chipping and flaking result. This also happens with very old glass. Rough, friable surfaces of this kind are easily damaged if packing cotton is allowed to come in contact with them. Accordingly, they must be wrapped first in tissue paper, then in cotton if additional protection is needed against shock. Great care must be exercised in every step of an operation involving articles of such delicate nature. Never overcrowd the trays and never overload the trucks—these are standard rules that call for reiteration.

In advocating the use of tray trucks and other rubber-tired hand vehicles for moving objects of art within the building, attention should be called to another general rule: Avoid speed, jarring motion, and hurried movements in handling art objects. This warning is particularly applicable to the need for caution in moving loaded tray trucks containing ceramics, glass, etc. Tension and haste in handling works in this group are the causes of most accidents.

Certain specific items which fall into the small, fragile classification must be protected against the hazards arising from qualities inherent in their material or constructions. Among these are:

Small Sculptures. Cleanliness of exhibits is of paramount importance. Small sculptures of marble, alabaster, limestone, terracotta, etc., absorb dirt and are not easily cleaned. Hence the use of gloves is recommended. As such pieces have considerable weight for their size and in many cases have a highly polished surface, there is danger of insecure grasp when handling them with gloves. For that reason it is advisable to get them promptly into padded trays or to

bed them on trucks with heavy pads in proper position on the truck floor. Since protective pads acquire a considerable amount of dirt when in constant use, they must be covered with tissue or wrapping paper (depending on the weight of the object) to keep the exhibit clean in transit. Whether in trays or on pads, however, each object must be individually supported with additional padding or padded wood blocks and wedges to prevent rolling or sliding and so to eliminate the possibility of damage through chipping or abrasion.

Ivories and Small Wood Carvings. These react quickly to sudden changes in temperature and humidity. Accordingly, every effort should be made to maintain a condition of fairly even humidity for such material. It is true that this general subject is more closely related to problems of installation and storage than to those of handling, yet the point should be made that such objects ought never be exposed to rapid changes in temperature or humidity. Wood and ivory carvings left in a tray truck near an open window when the outside temperature is considerably lower than that inside, and shortly afterwards moved to a warm storeroom, may suffer cracking and warping.

Arms and Armor. Exposure to dampness is similarly dangerous to works in polished metal, which, unless covered by a thin film of oil or other protective lubricant, absorbs moisture almost as readily as do the more porous ivories and woods. Consequently, every precaution must be taken to protect it against high humidity, no matter what the temperature. As to handling, curatorial supervision is strongly recommended for all operations involving the movement, installation, and dismantling of armor and related material. The ungloved hand in direct contact with the polished metal leaves an imperceptible residue of perspiration salt which is enough to cause rust.

Jewelry. Handling jeweled objects calls for staff supervision, not merely because of the intrinsic values involved but because procedures normally followed in protecting small pieces cannot be generally applied to all types of jewelry indiscriminately. For instance, packing cotton must never be placed in direct contact with

rings, brooches, pendants, or necklaces. The delicate prongs which hold gems in their settings are often caught in the cotton and loosened when the packing material is pulled away; loss of stones may result. Tissue paper should be used for wrapping each item separately; then the cotton may be placed around it for added safety.

When trays are used for moving small (in some cases minute) objects, they should be examined after removal of their contents to make sure nothing has been overlooked in the packing material. Very small objects should always be checked in and out of cases, trays, and packing and storage boxes. All packing and padding material should be preserved until it is quite certain that no object, in whole or in part, is missing.

Reports of Damage—Missing Objects. A primary rule in the handling of objects of art, to be understood thoroughly by every museum worker, is that damages which are reported can be repaired—but only if the fragments are preserved. Broken parts which are lost through carelessness or in an attempt to cover up an accident can never be replaced. Restoration is a poor substitute; it is expensive, and the result is an object of deteriorated value.

CARE AND HANDLING OF SMALL OBJECTS

GENERAL HANDLING RULES

Ceramics, Enamels, Glass, Etc.

1. Never handle any object unnecessarily. Work with proper supervision.
2. Move only one object at a time and carry it with one hand underneath. Unpack trays over padded tables so that detached parts will not be lost or damaged.
3. Do not lift small, fragile objects by handles, rims, or other projections; for these parts may have been broken and repaired. Hold the body of the piece gently but firmly. Check each object in and out of the tray when it is composed of more than one part. Pack each part separately within the tray.
4. Always use padded trays for moving small objects. Do not move them by hand except for placement in trays. Use sufficient cotton or padding within the tray to prevent contact with other objects. Whenever possible, objects should be so placed that they do not project above the top of the tray.
5. Make sure that hands are clean. Use gloves or tissue when handling objects with glazed, polished metal, or other highly finished surfaces. (All such material shows finger marks, which are difficult to remove.) Apply this rule to mat finishes and painted decoration as well. Smooth-surfaced objects are hard to handle with gloves or tissue; with them, extra care is necessary.
6. Do not move trays by hand from one part of the building to another. Use the trucks provided for the purpose. Speed and jarring in motion should be strictly avoided. Take time to do the job properly.

Small Sculptures

7. To avoid chipping and scratching in transit, small, heavy objects should always be set on pads and carefully supported so that the weight is evenly distributed.

Ivories and Wood Carvings

8. Ivories and small wood carvings are affected by sudden changes of atmosphere. Do not leave such pieces near open windows or doors, particularly during the winter months.

Arms and Armor

9. Arms and elements of armor are subject to damage in many ways. Such material should not be handled by the inexperienced except under competent direction. Always handle with gloves as finger marks cause rust. Any exposure to dampness should be avoided.

Jewelry

10. Never place cotton in direct contact with jewelry. It will catch on delicate parts, may loosen settings, and thus cause loss of stones. Wrap jewelry in tissue first and then in cotton if added protection is needed. (Ivories, enamels, and old glass should be treated in the same way, that is, wrapped in tissue first, then in cotton.) Staff supervision is necessary when working with jeweled objects.

EXAMINE OBJECTS TO DETERMINE CONDITION,

THEN HANDLE ACCORDINGLY.

REPORT EVERY DAMAGE NO MATTER HOW SLIGHT.

SAVE ALL PARTS WHICH BECOME DETACHED.

AVOID HASTE IN HANDLING OBJECTS.

AVOID SPEED WITH LOADED TRUCKS.

CARE AND HANDLING of TEXTILES

Hazards of mechanical violence to be guarded against: abrasion, puncture, disintegration. Other hazards include: extreme heat, water and dampness, and dirt.

The term mechanical violence is particularly applicable when describing dangers to objects in this field, which includes tapestries, rugs, costumes, and laces. Outward appearance is misleading because the deterioration of tensile strength in the threads of which a tapestry or rug is woven is not apparent on casual examination. Years of exposure to changing atmospheric conditions, particularly dry heat, have deprived old fabrics of their original inherent resilience. Accordingly, extreme care should be given every item in the category of textiles out of consideration for its vulnerability as well as its artistic and intrinsic value.

Tapestries and Rugs. Tapestries and rugs on exhibition are usually hung from bars or rollers. As such material comes from the wall, first remove all screw eyes, nails, pins, or wires which might damage the object in storage. When this has been done, the tapestry or rug may be rolled on its supporting bar or special storage roller. This operation should be carefully executed. Firm but not tight rolling is desirable and avoidance of creasing is important. Lined rugs or tapestries should be rolled face out.

In moving a rolled tapestry or rug about the building, lift and carry it by the supporting bar, never by the fabric alone. Stretching, tugging, and pulling are extremely injurious to worn rugs and textiles. Some may have been torn and repaired in the past and there is a possibility that these may come apart at or near the points of previous damage.

Ideal storage arrangements for this type of material call for individual hanging of each item in a refrigerated room where tem-

perature and humidity can be controlled (temperature under 40° F. and relative humidity between 40 and 50 per cent). Owing to limitations of space, however, such individual hanging is not always possible. Rolled, rugs or tapestries may be hung on chain and ring fixtures, the ring fitting over that part of the special storage bar which extends beyond the rolled textile. This hanging arrangement permits adequate circulation of air around each piece. Piling textiles on shelves for storage is not desirable, for the weight of the pieces on top bearing on those below can seriously weaken worn and dried out threads. If, however, textiles must be stored in piles, they should be carefully placed in the desired position. Selection is made easier and unnecessary handling reduced if individual hanging is possible.

To carry all but the very smallest rugs and tapestries, two men are required for each piece. Although one man may be physically able to carry a 9 by 12 foot rolled rug, the strain is too much for the fabric, as all the weight-pull will be concentrated at one point. Rugs and tapestries of any size should be lifted by several men at once to prevent injury to the handlers and damage to the objects.

Any discussion of the handling of rugs and tapestries would be incomplete without this warning: Always observe safety rules when working on ladders. Rugs and tapestries are usually hung for exhibition; they are heavy and clumsy. Therefore each ladder used in the installation process should be steadied at the foot by one of the men on the job.

Costumes and Small Textiles. Mounted textile panels present a special problem in handling, inasmuch as the stretching of fabrics automatically increases the possibility of damage to the material through even slight pressure upon its surface. Accordingly, textiles mounted on stretchers should be handled only by the stretcher or frame.

The folding of textiles, laces, costumes, and similar material is to be avoided wherever possible. Since most costumes are displayed on manikins, folding is necessary for storage only. Hanging is preferable to box storage for costumes, provided the fabric is in good

condition. Pliofilm garment bags or any other transparent, dust-proof containers in which the costumes can be hung are recommended. If lack of space prevents individual hanging, a corrugated cardboard box for each costume is the next best thing. For indefinite storage tight packing should not be permitted. To lessen the possibility of damage from mildew or mold, sprinkle paradichlorobenzene crystals in the storage bags or boxes.

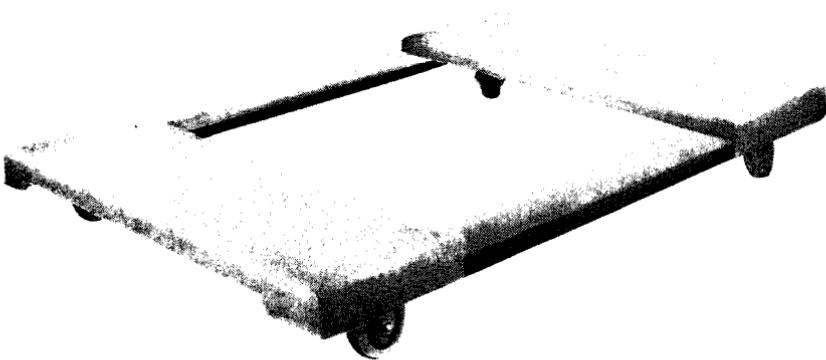
Although the practice is ill-advised from a preservation stand-point, unmounted laces, embroideries, etc., are usually folded when not on exhibition. This emphasizes the need for careful folding. Creasing not only spoils appearance, but repeated folding on the same creases may eventually cause irreparable injury. Rebacking, patching, reweaving, and piecing necessitated by improper care are not justifiable; no matter how cleverly done, the resulting restoration is only a substitute for the original work. When folding costumes and textile panels, tissue paper may be used in the folds to help prevent sharp creasing. The use of blue tissue in preparing lace for storage helps to prevent discoloration. Lace panels, runners, and other rectangular items may be rolled on cardboard tubes; it is best to roll tissue in with the piece, so that the material will not be rolled on itself.

In most of these subdivisions of the subject of handling the obvious general rules crop up again and again. This seems unavoidable if we are to be certain that their application to several particular needs is not overlooked. One such reminder is the necessity for clean hands when handling objects of art. This is especially true in working with textiles, as many costumes, laces, etc., are so fragile that cleaning is almost impossible.

Another warning about cleanliness: Costumes stored on manikins and undraped manikins should be completely covered to prevent damage from dust. (When such displays are moved, the manikins should be lifted by the framework—to keep the exhibits clean and to insure firmer support in transit.) While muslin is frequently used as dust-cover material for costumes in storage, it is not particularly effective for indefinite storage, as dust sifts through

unless the muslin is of a much tighter weave than that in general use. Kraft-type paper, although it requires more careful manipulation to avoid tearing, is really better for dust protection. Pliofilm or any other transparent plastic-base pliable material is most satisfactory for dust jackets and has the added advantage of leaving the contents visible. This facilitates periodic inspection of the stored material without unpacking.

In dismantling costume and small textile exhibits, see to it that all pins are removed to eliminate the dangers of blood stains resulting from pin pricks and of rust stains during storage. In wrapping costumes, textiles, etc., for storage or shipment, tar-lined waterproof paper should never be used. The high temperatures to which rail or truck shipments may be subjected in transit and which are sometimes unavoidable in storage are sufficient to melt the tar lining and cause serious damage to the fabrics.



TROLLEY FOR BOXED MATERIAL AND FOR GENERAL USE

CARE AND HANDLING OF TEXTILES

GENERAL HANDLING RULES

Tapestries and Rugs

1. Never lift mounted textiles so that all the weight is borne by the fabric alone. Use the supporting bar, roller, or stretcher for lifting and handling textiles.
2. Avoid stretching, tugging, and pulling. Textiles which seem to be sturdy are frequently old, worn, or repaired. They tear easily.
3. Remove screw eyes, wires, or other projections before rolling textiles on supporting bars. In storage such projections wear through and injure fabrics permanently. Roll tapestries and rugs evenly, avoiding wrinkling and creasing. Roll lined material face out.
4. Rugs and tapestries on rollers should not be picked up by one man or grasped at the middle of the bar. Use two men, one supporting each end, for greater protection of this type of material in transit.
5. Do not pile rolled or folded textiles one on top of another unless it is absolutely necessary. This practice results in broken threads which are virtually impossible to repair.
6. Observe safety rules when removing rugs and tapestries from exhibition. There should be a man at the foot of each ladder in use to steady it.

Costumes and Small Textiles

7. Handle mounted textiles by the stretcher or frame. Even slight pressure on tightly stretched fabrics causes serious damage.

8. Avoid folding textiles, laces, costumes, etc., wherever possible. If it is necessary to fold them, tissue paper should be placed in the folds to prevent creasing.
9. Clean hands are essential in working with textiles. Many fabrics are so fragile that cleaning is impossible.
10. Cover costumed manikins in transit and in temporary storage. They should be lifted by the framework when moved, to avoid soiling or tearing the costumes.
11. After removing textiles, costumes, etc., from exhibition, be sure that all pins are removed to prevent rust stains and blood stains from scratched fingers.

WORK ON TEXTILES SHOULD BE DONE

UNDER STAFF SUPERVISION.

REPORT ANY DAMAGE WHICH APPEARS TO BE NEW.

CARE AND HANDLING of WORKS ON PAPER

Hazards of mechanical violence to be guarded against: abrasion, puncture, disintegration, tearing, and creasing. Other hazards include: extreme heat, water and dampness, sudden changes of temperature and humidity, dirt.

Of all the varied types of materials which pass through the hands of museum workers, objects in this class are among the most vulnerable to damage through carelessness. The support, on which the chalk, crayon, printer's ink, water color, etc., is applied, is by nature susceptible to deterioration. In storage it must be kept dry, in a well-aired space, and the relative humidity should be maintained below 60 per cent, as damp paper fibers are excellent food for mildew and mold. (Paradichlorobenzene crystals sprinkled in storage containers and on the shelves where books are kept will help prevent the growth of mold.) While these are primarily storage matters, their importance in the conservation of works on paper is such that all who handle exhibits of this type should be familiar with the hazards involved. Furthermore, material of this kind should not be exposed to dampness, extreme heat, or other harmful conditions even for brief intervals while they are awaiting installation or storage.

Mats and protective separators—as well as backing papers and storage-box linings—provided for use with prints, water colors, and similar material must be of good quality rag-fiber paper. Newsprint or any other printed matter, low grade cardboard, and poor quality wrapping paper which are in direct contact with the objects for any length of time discolor the support, just as paper takes on the grain of wood. Similarly, an impression (and with it the quality) of a print is left on the glass when an unmatted print is pressed

tightly to it for a long period of time. Like treatment would, of course, adversely affect the decorated surfaces of illuminated manuscripts and Near Eastern miniatures.

The quality of mat stock and protective papers is determined by the staff members responsible for the safety of works in this class. Ultimately, however, it is the worker, dismantling an exhibition or preparing it for storage or shipment, who can negate any other protective measures by using the wrong kind of separation sheets. Accordingly, preparation of material for exhibition, matting, framing, or any direct contact with the works themselves, should be entrusted only to trained and experienced men. If such assistance is not available, staff supervision, which carries with it assumption of responsibility for every phase of an operation, is a necessity.

The mounting of works on paper is a most important part of any conservation program, and detailed descriptions of accepted procedures are presented in several of the references listed at the end of this section. Some museums which do not employ professional mat-cutters send their work out to commercial picture-framers. Others allow untrained men to mount prints, drawings, and water colors, to the detriment of the works in question. While there is little justification for treatment of their own property in this manner, there is none at all for such mistreatment of the property of others lent to them for special exhibition.

Next to mechanical violence, the greatest danger to paper is the type of adhesive used in affixing (hinging) the object to the mount. Because of its convenience, as much as for any other reason, transparent scotch tape is frequently used for this purpose and, unfortunately, it is one of the most destructive. It is practically impossible to remove it from paper without taking with it a layer of the paper itself—usually from the face of the object. By using great care, scotch tape may be removed from exceptionally hard surfaced papers (on which works of this kind are seldom executed) without actually tearing the support. The adhesive residue, however, which can only be scraped off with a knife or chemically removed, leaves a definite stain in the paper. Rubber cement has a similar effect—it

stains. In general, no adhesive substance is safe that doesn't dry completely. One of the best pastes is that made from rice or wheat flour. Its ingredients and preparation are fully described in Plenderleith's *Conservation of Prints, Drawings, and Manuscripts*.

Against the ordinary hazards of mechanical violence, certain precautions must be taken. An unmounted print or drawing should be lifted by the upper corners so that it hangs free without buckling. When carried by hand for any distance, such works should be supported with clean cardboard to prevent bending or cracking. Unmounted works on paper should not be stacked unless stacking is unavoidable; then each piece should be separated from the others by smooth surfaced (but not heavily sized) paper of good quality—cellophane, glassine, tissue, or mulberry—to protect against rubbing, shuffling, or abrasion of the decorated surface. Abrasion of such delicately attached media as chalk, crayon, pencil, and water color results in permanent injury. Actually, material of this nature should never be stacked unless it is matted, and even then separators should be used between the mounts for additional protection from dust and dirt. Wet, sticky, or dirty hands must never come in contact with works in this group.

Rare Books. Books are particularly subject to handling out of curiosity and the practice is as hazardous, in its own way, as mold or mildew. If it cannot be controlled, simple rules on the proper care of books should be widely disseminated. The same considerate treatment that is recommended for unbound works on paper should be accorded rare books. Most museums and libraries, it is true, limit the circulation of important volumes to those who know how to use them. Those persons who do not know should be expressly cautioned about bindings. Seemingly sturdy leather may have been weakened by tension, excessive heat, or dampness, which over a period of years, will reduce natural resistance to wear and tear.

It cannot be stated too frequently that responsible supervision of workers engaged in handling first-class material is the best form of insurance against physical damage. With books, as with other works on paper, this is notably true. Many workers who have a basic

knowledge of the general safety rules concerning art do not, for example, know how to open a book. One common fault is cracking the binding by trying to make the open book lie flat; another is the stacking of open books. An open book should never be placed face down. In placing books on trucks, tables, shelves, etc., never stand them on their front edges. In this position the weight of the book forces it down, spreads the covers and, in so doing, crushes the leaves and breaks the binding. The turning of pages from the upper, outer corners only is strongly recommended.

REFERENCES:

Ivins, William M., Jr. "Mounting and Preservation of Prints." In *Museum Work*, vol. I (1918-19), p. 173-179.

Lydenberg, H. M., and Archer, John. *The Care and Repair of Books*. New York, 1931.

Plenderleith, H. J. *The Conservation of Prints, Drawings, and Manuscripts*. London, 1937.

THE CARE AND HANDLING OF WORKS ON PAPER

GENERAL HANDLING RULES

Works in this group are among the most fragile and easily damaged in the museum. Treat them with the consideration they deserve. They are not to be handled unless it is your job to do so and then only under proper supervision.

Drawings, Water Colors, Prints, Miniatures, Etc.

1. Handle as little as possible and only with clean hands. Never touch material of this kind with wet, sticky, or dirty hands.
2. When moving unmounted material, lift each sheet by the upper corners so that it hangs free without buckling. Use great care to avoid bending, cracking, and tearing. Support such works on clean cardboard when carrying them by hand.
3. Never stack prints, drawings, etc., one on top of another unless they are matted or are separated by cellophane, glassine, or tissue paper. Do not allow newsprint, printed matter, or other paper of poor quality to come into direct contact with the objects. Cover works awaiting installation or transportation with tissue paper to exclude dust and dirt.
4. Do not permit works on paper to be shuffled or rubbed against each other. Difficult and expensive retouching is the only way in which damage done in this manner can be repaired.
5. Do not expose prints, drawings, water colors, and illuminated manuscripts to direct sunlight whether on exhibition, awaiting installation, or in storage.

Rare Books

6. Many bindings which appear to be in good condition are extremely fragile. Leather bindings are easily stained. Do not handle rare books unless it is necessary for you to do so.
7. Turn the pages from the upper, outer corners when it is necessary to open books. Moistened fingers are extremely harmful to paper.
8. Open books gently so as not to crack the bindings—that is, never try to make an open book lie flat. Never stack open books one on top of another. Do not place open books face down. Do not stand books on their front edges, whether on tables, trucks, or shelves.

REPORT EVERY NEW DAMAGE NO MATTER HOW SLIGHT.

SAVE ALL FRAGMENTS WHICH BECOME DETACHED.

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